

**SYSTEM AND METHOD
FOR THREE-DIMENSIONAL VIDEO IMAGING USING A SINGLE
CAMERA**

5

Abstract of the Disclosure

One aspect of this disclosure relates to a method for recovering the three-dimensional (3D) point geometry of an object from images acquired with a single camera. The present subject matter uses single-camera images, models generalized camera lines-of-sight outside the camera, and uses linkage distances between
10 markers on an object and the modeled lines-of-sight to recover the 3D positions of markers on the object. The linkage distances are used to recover information about the third dimension that would otherwise be lost in single-camera two-dimensional images. Benefits include low-cost, simplicity, and ease of calibration and
15 positions as accurately as with a commercially available multi-camera 3D system. Other aspects and embodiments are provided herein.